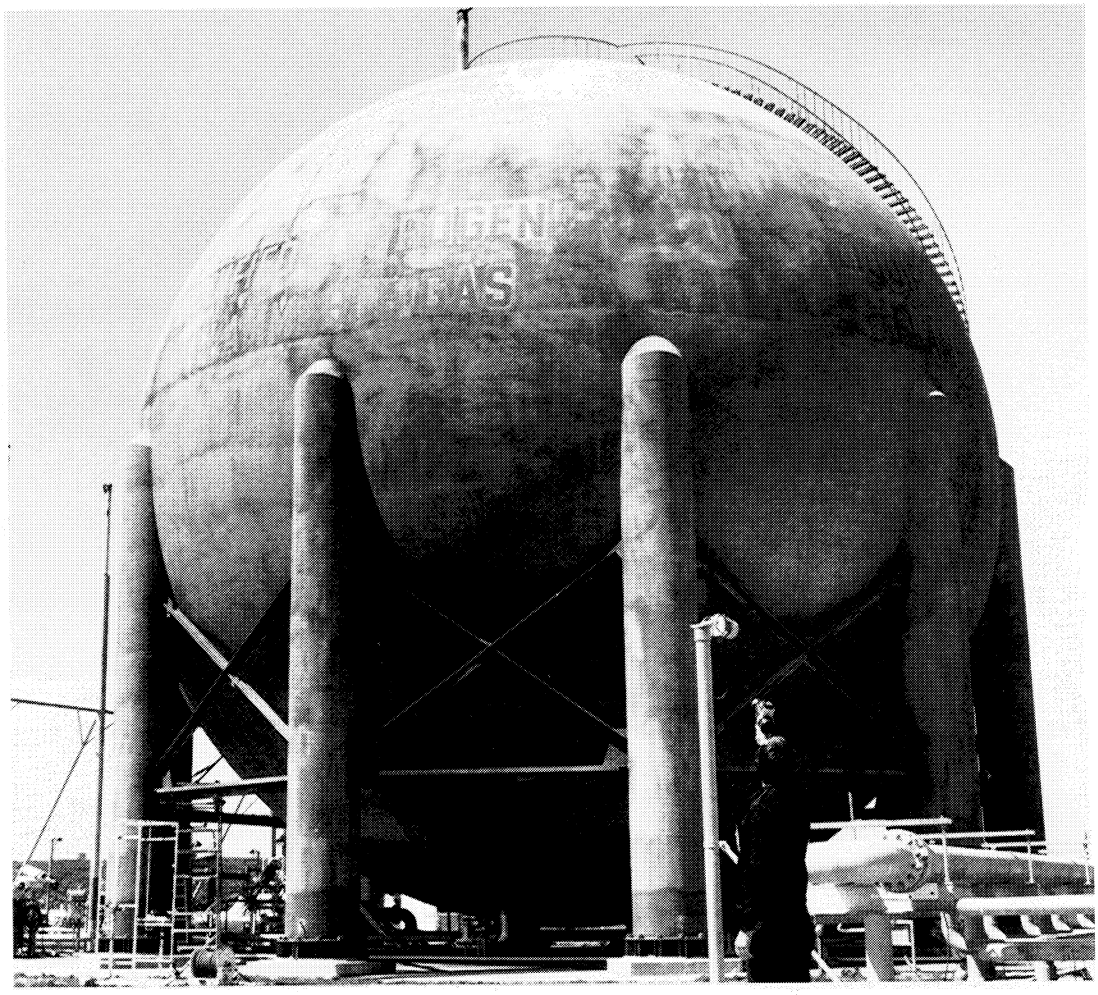
For use in the Space Shuttle's main engines and other rocket systems, NASA stores liquid hydrogen in large spherical tanks at Kennedy Space Center (KSC) and feeds it to launch pads through a network of pipes, valves and return lines. A high energy propellant, hydrogen is important to space operations but it requires careful handling on the ground; it is easily ignited and a spark could touch off an intensely-burning fire that is especially troublesome because hydrogen burns with an invisible flame. NASA thus saw a need for a portable hydrogen fire detector that would enable technicians to monitor regularly the spread-out propellant storage and delivery system.

The answer was a hand-held ultraviolet fire detector, developed under NASA contract by Detector Electronics, Minneapolis, Minnesota, manufacturer of a wide array of permanently-mounted ultraviolet and infrared fire detectors. Shown in use at KSC (above) and in closeup (far right), the system developed for NASA has become a commercial product for use in hydrogen generating plants, pipelines and other hydrogen handling facilities.



The hand-held detector has sensors that can spot an invisible hydrogen flame at distances up to 100 feet. It has a visual readout that shows the level of ultraviolet radiation and it also provides an aural fire alert, a buzzing sound in the operator's earphones. Because the sensors are designed to react only to a narrow band of ultraviolet radiation, the detector cannot be fooled by sunshine, reflections, incandescent or fluorescent lights. Detector Electronics delivered the first commercial units in 1985. ▲